Specialist High Skills Major

Sector-Specific Guide

Forestry

DRAFT 2007–2008

2008-01895/

Contents

A. Overview 2

B. Advantages of Earning a Specialist High Skills Major (SHSM) in Forestry 3

C. Required Components for the SHSM–Forestry 5

D. Pathways for the SHSM–Forestry 12

E. Occupations in the Forestry Sector 16

F. Postsecondary Programs and Training Related to Careers in the Forestry Sector 18

G. Resources 19

H. Appendices 22

Program Profiles **39**

A. Overview

The Specialist High Skills Majors (SHSM), launched in September 2006, are part of the Student Success Strategy initiative, which focuses on expanding quality learning opportunities and supporting success for all students. The SHSM is a ministry-approved specialized program that allows students to focus their learning on a specific economic sector while meeting the requirements for the Ontario Secondary School Diploma (OSSD). This career-focused program is also designed to help prepare students to make the transition from secondary school to apprenticeship training, college, university, or the workplace. An SHSM enables students to gain sector-specific skills and knowledge in the context of engaging, career-related learning environments and helps them focus on graduation and on pursuing their postsecondary goals.

The ministry has published the *Specialist High Skills Major Implementation Guide*, as well as sector-specific guides, like this one, for each of the SHSM economic sectors. Boards and schools are strongly encouraged to refer to the *SHSM Implementation Guide* along with the SHSM sector-specific guides when planning and implementing an SHSM.

This guide provides information about the five required components of the SHSM–Forestry, sample pathways for the SHSM, examples of postsecondary programs in the sector, a list of resources, and profiles of the programs that were being offered in Ontario schools in 2007–08.

B. Advantages of Earning a Specialist High Skills Major (SHSM) in Forestry

Ontario is blessed with vast, sustainable, managed forests, the foundation of a thriving forest products industry that manufactures high-quality products for world markets, such as specialty grade papers, engineered wood products, and composite building products. The forest industry provides direct and indirect employment to over 200 000 people across the province. While many communities in the north depend on the industry, thousands of jobs in southern Ontario depend on companies that supply the industry or use its products. The United Nations Food and Agriculture Organization predicts a 56 per cent increase in global industrial timber demand between now and 2010.

At present, there is a severe shortage of skilled forestry workers and entry-level wages are higher than those for most of the registered trades. Students also have the option to study forestry at college and university.

The SHSM–Forestry enables students to build a foundation of sector-focused knowledge and skills before graduating and entering a postsecondary destination, whether it be apprenticeship training, college, university, or an entry-level position in the workplace.

Pursuing the Specialist High Skills Major–Forestry enables students to:

- customize their secondary school education to suit their interests and talents while meeting the requirements for the OSSD;
- select a bundle of 9 required credits focused on sector-specific knowledge and skills that are:
  - valued by the forestry sector and postsecondary educational institutions;
  - designed to help prepare students for a postsecondary destination of their choice in this economic sector;
  - designed with the flexibility to allow students to shift between pathways (e.g., switch from a pathway leading to college to an apprenticeship pathway) or to discontinue the SHSM program should their career plans change in Grade 11 or 12;
- provide evidence of achievement of the required components of the SHSM (e.g., sector-recognized certifications) for prospective employers and postsecondary educational institutions;
- explore, identify, and refine career goals and make informed decisions about their postsecondary options;

- take part in "reach ahead" experiences that will help them gain confidence in their ability to be successful, refine skills and work habits, and make an informed choice about future careers and next steps;
- develop Essential Skills and work habits that are required in the sector, and have their performance of those skills and work habits assessed and documented, using tools connected with the Ontario Skills Passport;
- access resources, equipment, and expertise that may not be available in their secondary school.

C. Required Components for the SHSM–Forestry

Required Components for the SHSM–Forestry

1. a bundle of 9 Grade 11 and Grade 12 credits that includes:
   i) 4 forestry major credits that provide sector-specific knowledge and skills;
   ii) 3 other required credits from the Ontario curriculum, in English, mathematics, and science, in which some expectations are met through learning activities contextualized to the forestry sector;
   iii) 2 cooperative education credits that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills
2. 7 sector-recognized certifications and/or training courses/programs (4 compulsory and a choice of 3 from a list of additional certifications and training courses/programs)
3. experiential learning activities within the sector
4. "reach ahead" experiences connected with the student's postsecondary pathway
5. development of Essential Skills and work habits required in the sector, and use of the Ontario Skills Passport (OSP) for purposes of documentation

Students earning an SHSM receive an OSSD with the red SHSM seal as well as an SHSM Record that documents the student's achievement of the required components.

The five required components for an SHSM diploma designation are designed to give students a rich and varied range of curriculum-based and experiential learning experiences, as a foundation for making a successful transition to their chosen postsecondary education or training program or occupation.

Local circumstances, such as facilities and equipment, staff qualifications, partnerships, and agreements, determine how the SHSM's required components can be offered to students. Depending on these circumstances, the components may be delivered in a secondary school, college, training centre, other approved site, or a combination of these delivery settings. See the *SHSM Implementation Guide* for more information on delivery models.

No substitutions for any of the five required components of an SHSM are permitted.

1. Bundled Credits

Each SHSM has a bundle of credits that consists of major credits, other required credits, and cooperative education credits. The bundle for the SHSM–Forestry consists of:

i) 4 major credits;

ii) 3 other required credits;*

iii) 2 cooperative education credits.

The credits in the bundle prepare students for one of four postsecondary options – apprenticeship training, college, university, or the workplace.

i) Major credits

Each SHSM has four major credits that enable students to build a foundation of sector-focused knowledge and skills. The major credits may be:

- credits for Ontario curriculum courses;
- credits for ministry-approved locally developed courses (LDCs); or
- dual credits, which are subject to their own approval policies and procedures.

ii) Other required credits

In addition to the major credits, each SHSM includes *other required credits* from the Ontario curriculum. (In the SHSM–Forestry, the other required credits are in English, mathematics, and science.) These courses are delivered by the teachers of the required subjects, and involve the use of contextualized learning activities (CLAs), which enable students to connect their learning in these courses to their SHSM sector. CLAs are based on curriculum expectations from the required course. One or more CLAs, totalling a minimum of six hours in length, must be incorporated into each required course. (A CLA template is provided in Appendix A.)

iii) Cooperative education credits

Cooperative education provides authentic learning experiences in a workplace setting that enable students to refine, extend, apply, and practise the sector-specific knowledge and skills acquired in the bundle of credits. Each SHSM requires that students complete a minimum of two credits in cooperative education linked to the major credits. (More than two credits are recommended, if the student's timetable permits.)

Students may earn their minimum of two cooperative education credits in Grade 11 or Grade 12, as a single credit in each grade or a double credit in one grade. (Students in the university pathway, however, are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.) Depending on local circumstances, students may have to complete their cooperative education credits through continuing education, in the summer, or through virtual cooperative education. See *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*.

* SHSMs in other sectors may require 2, 3, or 4 "other" credits. For details, see the other sector-specific guides.

Summary of the Required Credits in the Bundle for the SHSM–Forestry

The 9 required credits in the bundle for the SHSM–Forestry are identified in the table below. No substitutions for the credits in the bundle are allowed, and the credits must be at the specified grade level. School boards are required to submit for ministry approval their proposed pathway chart for each SHSM offered by their schools, indicating the credits in each bundle by pathway. Once a credit bundle is approved, the board may not change any of the credits in the bundle for that school year.

Required Credits in the Bundle for the SHSM–Forestry

Credits	Apprenticeship Training		College		University		Workplace	
	Gr. 11	Gr. 12	Gr. 11	Gr. 12	Gr. 11	Gr. 12	Gr. 11	Gr. 12
Forestry Major*	2	2	2	2	2	2	2	2
English	1		1		1			1
Mathematics		1		1		1	1	
Science	1		1		1		1	
Cooperative Education	2		2		2		2	
Total number of credits	9		9		9		9	

* Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2000*, page 6).

A pathways chart is given on page 14, showing subjects and courses that students could take to explore the SHSM in forestry in Grades 9 and 10, and courses they would have to take in Grades 11 and 12 to complete this specialized program. Sample bundles of credits that would meet the requirements for the SHSM–Forestry are provided in the chart on page 15.

2. Sector-Recognized Certification and Training

Sector-recognized certifications and training courses/programs, including those addressing safety, are important for students who are working towards the SHSM and provide them with an advantage when they are entering the workforce, whatever their chosen career goal may be.

Certification and training courses/programs must:

- be delivered by a certified trainer – a person recognized by the certification provider or by the sector as an authority. (This requirement does not apply to WHMIS.);
- include an assessment and evaluation component;
- include, wherever possible, documentation such as a certificate or other proof of completion for the student's portfolio and the student's SHSM Record. The SHSM Record will indicate the title of each certification earned or training course/program completed, the number of hours involved, and the date the certification/training was completed.

The SHSM in forestry requires students to complete seven (7) sector-recognized certifications and/or training courses/programs. Of these, four (4) are compulsory and the remaining three (3) are to be chosen from the list in the following chart. These requirements are summarized below.

SHSM–Forestry: Sector-Recognized Certification and Training

Four (4) compulsory			
Standard First Aid	Cardio-Pulmonary Resuscitation (CPR)	compass/map/GPS training	generic (i.e., not site-specific) instruction about the Workplace Hazardous Materials Information System (WHMIS)
Three (3) from the list below			
all terrain vehicle (ATV) safety	bear safety	chainsaw safety	fall protection
harvesting equipment safety	health and safety in the forest	hoisting and rigging	personal protective equipment in forestry
professional cable skidding	propane safety	safe tree cutting and logging	skidder/loader safety
suspended access equipment	wilderness first aid		

Note: Items that are capitalized are the *proper names* of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certification or training courses/programs should be selected by the school or board.

Boards and schools may provide opportunities for students to complete additional training.

No substitutions for items in the above lists or changes in the *number* of required certifications and training courses/programs are permitted.

3. Experiential Learning Activities

The SHSM experiential learning requirement consists of planned learning activities that take place outside the traditional classroom setting. Experiential learning, which can include job shadowing, job twinning, work experience, virtual work experience, and cooperative education (see Appendix B), enables students enrolled in the SHSM to find out about opportunities available to them in connection with the careers that interest them.

Experiential learning activities give students opportunities to explore, observe, participate in, and reflect on a variety of sector-specific experiences and careers. They also enable students to increase their awareness of, and develop, the Essential Skills and work habits required in the sector, and to have their performance of those skills and habits assessed and documented, using tools connected with the Ontario Skills Passport. An experiential assignment or task could require students to identify examples of how the Essential Skills are applied in specific trades and administrative and management occupations (e.g., estimator, safety officer) in a forestry business.

Experiential learning opportunities could include:

- one-on-one observation of a cooperative education student at a placement in the forestry sector (example of job twinning);
- a day-long observation of staff at a lumber yard (example of job shadowing);
- a one- or two-week work experience with a member of an industry association or a professional in the sector (example of work experience);
- participation in a local, provincial, or national Skills Canada competition;
- a tour of a forestry industry workplace (e.g., a saw mill);
- a volunteer experience planting trees as part of a community initiative;
- attendance at a forestry sector trade show, conference, or job fair.

An experiential learning activity connected with the student's postsecondary pathway can be considered a "reach ahead" experience (see section 4, below). For example, job shadowing a skilled tradesperson in a local forestry business would be an experiential learning activity for all students in a Forestry SHSM, but it could also be a "reach ahead" experience for a student considering a career as such a tradesperson. Note, however, that the activity can be recorded *only once* on the student's SHSM Record – as either an experiential learning activity or a "reach ahead" experience. This restriction reflects the expectation, described earlier, that the student's SHSM program will offer a rich and varied range of experiential learning opportunities.

Cooperative education is also a form of experiential learning. However, for the purposes of the SHSM program requirements and the student's SHSM Record, the two cooperative education credits must be counted as part of the SHSM bundled credit requirement.

Experiential learning placements for students must be arranged by the school and must meet the following requirements:

- A placement must be assessed by a teacher before the student is assigned to it to ensure that the placement offers a positive learning environment and a safe workplace. (*See Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools*, 2000. Available online at www.edu.gov.on.ca/eng/document/curricul/secondary/coop/cooped.pdf.)
- A placement must have Workplace Safety and Insurance Board coverage through the ministry or the workplace.(See Policy/Program Memorandum No. 76A, September 27, 2000; excerpted in Appendix B of the *SHSM Implementation Guide*.)

For more information consult *Live Safe! Work Smart! Appendix for Cooperative Education and Other Forms of Experiential Learning*, at www.livesafeworksmart.net/english/coop/coop_appdx.htm.

For a summary of the regulations governing age requirements for working in and/or visiting workplaces in Ontario, see Appendix C.

4. "Reach Ahead" Experiences

Students in the SHSM in forestry must have learning experiences connected with their postsecondary pathway. "Reach ahead" experiences can range from visiting a college to investigate the program a student is considering, to sitting in on university classes in a student's field of interest, to discussing the postsecondary education, training, and experiences of someone in the occupation a student is interested in. These experiences can vary in length – from a few hours to the time necessary for a full course. Examples include:

- *Workplace:* touring a plant that manufactures wood products
- *Apprenticeship training:* spending a day with an arborist
- *College:* interviewing staff with responsibilties related to forestry in the Ministry of Natural Resources (MNR)
- *University:* partnering with a university student for a day to observe lectures and/or labs in a forestry program
- *All pathways:* attending a presentation on forest fire prevention by Parks Canada

Every "reach ahead" experience should have an assignment or task associated with it. For example, the assignment for a student considering an apprenticeship pathway could be to interview a tradesperson to discover details about his or her training, and to write a report summarizing the tradesperson's answers.

5. Development of Essential Skills and Work Habits, and Use of the Ontario Skills Passport (OSP) for Purposes of Documentation

Human Resources and Social Development Canada (HRSDC) has identified and validated the Essential Skills that people need for life, learning, and work. Essential Skills are foundational skills that make it possible to learn technical skills and other job- or workplace-specific skills. They are skills that enable people to perform tasks required in their jobs and to participate fully in the workplace and in the community. These Essential Skills are transferable from school to work, job to job, and sector to sector. The Ministry of Education and the Ministry of Training, Colleges and Universities have developed the Ontario Skills Passport (OSP) on

the basis of the HRSDC's Essential Skills. The OSP also incorporates work habits that are beneficial not only for work but also for life and learning. The skills and work habits included in the OSP are as follows:

Essential Skills	Work Habits
• Reading Text • Writing • Document Use • Computer Use • Oral Communication *Numeracy* • Money Math • Scheduling or Budgeting and Accounting • Measurement and Calculation • Data Analysis • Numerical Estimation *Thinking Skills* • Job Task Planning and Organizing • Decision Making • Problem Solving • Finding Information	• Working Safely • Teamwork • Reliability • Organization • Working Independently • Initiative • Self-Advocacy • Customer Service • Entrepreneurship

The Ontario Skills Passport provides clear descriptions of Essential Skills that are used in nearly all occupations and of work habits that are important for success in the workplace. The OSP provides a common language that helps students build competence and confidence and make connections between school and their prospective careers. The OSP also provides employers with a consistent method of assessing the student's demonstration of these skills and work habits in the workplace.

Sector representatives consulted on the development of the SHSMs emphasized the importance of the Essential Skills and work habits included in the OSP. Students pursuing an SHSM in forestry track their development of Essential Skills and work habits in their OSP Work Plan throughout their experiential learning activities (including cooperative education placements and "reach ahead" experiences). In consultation with the teacher, employers assess each student's demonstration of Essential Skills and work habits identified in the OSP and record their assessments in the student's OSP Work Plan.

See the *SHSM Implementation Guide* for more information about the OSP and how it can be used in connection with an SHSM program. The OSP website (http://skills.edu.gov.on.ca) also offers resources for the use of the OSP in SHSM programs.

D. Pathways for the SHSM–Forestry

This section contains the following:

- ideas that schools and boards can use to promote awareness and exploration of the SHSM–Forestry among students and to help students as they make the decision to specialize in this program
- a chart showing a pathways template for completing the SHSM–Forestry
- a chart that contains sample bundles of credits for the SHSM–Forestry

Strategies for Promoting and Suggestions for Planning the SHSM–Forestry

Grades 7 and 8: Awareness

The following are examples of strategies that boards and schools can use to build Grade 7 and 8 students' awareness of the SHSM program:

- organize field trips, competitions, and activities in the community that are specific to the SHSM
- host presentations or talks on careers with guest speakers and mentors from the sector
- hold a summer program sponsored by the sector before students enter secondary school
- organize experiences at a secondary school in the program related to this sector
- invite current SHSM–Forestry students to share their experiences

Grades 9 and 10: Exploration

Students who are considering pursuing the SHSM–Forestry can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options related to the forestry sector:

- Integrated Technologies: A Grade 9 course recommended for all SHSM pathways that have a technological education focus. It provides students with opportunities to explore a variety of technologies by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.

Grades 11 and 12: Specialization

Students acquire the sector-specific knowledge and skills required to earn their OSSD with an SHSM–Forestry by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable them to pursue their goals.

Forestry sector contacts have identified knowledge of entrepreneurship and basic business practices as important for students as they prepare for careers in this sector. It is, therefore, recommended that in Grade 11 or 12 students do one of the following:

- complete an entrepreneurship course offered in the Ontario business studies curriculum
- pursue an extracurricular activity focused on entrepreneurship (e.g., participation in Junior Achievement's Company Program)

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Pathways Template for the SHSM–Forestry

- Shaded boxes – required credits in the bundle for the SHSM–Forestry
- (C) – compulsory credits for the OSSD
- (R) – courses that are recommended in light of the student's pathway and career interests

Grade 9 *Exploration*	**Grade 10** *Exploration*	**Apprenticeship Training Pathway** *Specialization*		**College Pathway** *Specialization*		**University Pathway** *Specialization*		**Workplace Pathway** *Specialization*	
		Grade 11	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**
An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit
(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English	(C) English
(C) Mathematics	(C) Mathematics	(C) Mathematics	Mathematics	(C) Mathematics	Mathematics	(C) Mathematics	Mathematics	(C) Mathematics	(R) Mathematics
(C) Science	(C) Science	Science	(R) Science	Science	(R) Science	Science	(R) Science	Science	An optional or a compulsory credit
(C) Geography of Canada	(C) Canadian History	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**
(C) Core French	(C) Career Studies/ Civics	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**	**Forestry Major**
(C) Healthy Active Living Education	(C) The Arts	May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *recommended in Gr. 11**		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*	
(R) Integrated Technologies	(R) Manufacturing Technology *or* Transportation Technology	(R) Geography *or* an optional or a compulsory credit	Business Studies *or* Cooperative Education *or* an optional credit	(R) Geography *or* an optional or a compulsory credit	Business Studies *or* Cooperative Education *or* an optional credit	(R) Science	(R) Mathematics	(R) Geography *or* an optional or a compulsory credit	Business Studies *or* Cooperative Education *or* an optional credit

* Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

Sample Bundles of Credits for the SHSM–Forestry

- Shaded boxes – required credits in the bundle for the SHSM–Forestry
- (C) – compulsory credits for the OSSD
- (R) – courses that are recommended in light of the student's pathway and career interests
- The letters C, E, M, O, and U at the end of course codes indicate the following types of courses: C – college preparation; E – workplace preparation; M – university/college preparation; O – open; U – university preparation
- A list of **all** courses that are approved for inclusion in the bundle of credits for an SHSM–Forestry is available on the Ministry of Education website, at www.edu.gov.on.ca.

Apprenticeship Training Pathway		**College Pathway**		**University Pathway**		**Workplace Pathway**	
Grade 11	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**	**Grade 11**	**Grade 12**
An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit	An optional or a compulsory credit
(C) ENG3E English	(C) ENG4E English	(C) ENG3C English	(C) ENG4C English	(C) ENG3U English	(C) ENG4U English	(C) ENG3E English	(C) ENG4E English
(C) MCF3M Functions and Applications	MCT4C Mathematics for College Technology	(C) MCF3M Functions and Applications	MCT4C Mathematics for College Technology	(C) MCR3U Functions	MHF4U Advanced Functions	(C) MEL3E Mathematics for Work and Everyday Life	(R) MEL4E Mathematics for Work and Everyday Life
SBI3C Biology	(R) SNC4E Science	SBI3C Biology	(R) SCH4C Chemistry *or* SPH4C Physics	SBI3U Biology	(R) SCH4U Chemistry	SNC3E Science	GLN4O Navigating the Workplace
Forestry Major THF3S (LDC)*	**Forestry Major** CGR4E The Environment and Resource Management	**Forestry Major** THF3S (LDC)*	**Forestry Major** CGR4M The Environment and Resource Management	**Forestry Major** THF3S (LDC)*	**Forestry Major** CGO4M Geomatics: Geotechnologies in Action	**Forestry Major** THF3S (LDC)*	**Forestry Major** CGR4E The Environment and Resource Management
Forestry Major TMJ3E Manufacturing Technology *or* TTJ3E Transportation Technology	**Forestry Major** TMJ4E Manufacturing Technology *or* TTJ4E Transportation Technology	**Forestry Major** TMJ3C Manufacturing Engineering Technology	**Forestry Major** TMJ4C Manufacturing Engineering Technology *or* CGO4M Geomatics: Geotechnologies in Action	**Forestry Major** TMJ3C Manufacturing Engineering Technology	**Forestry Major** SBI4U Biology	**Forestry Major** TMJ3E Manufacturing Technology *or* TTJ3E Transportation Technology	**Forestry Major** TMJ4E Manufacturing Technology *or* TTJ4E Transportation Technology
May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*		May be used as a (C) Cooperative Education (2 credits) *recommended in Gr. 11***		May be used as a (C) Cooperative Education (2 credits) *in either Gr. 11 or Gr. 12*	
(R) CGT3E Geographics: The Geographer's Tool Kit	BDV4C Entrepreneurship: Venture Planning in an Electronic Age	(R) CGT3E Geographics: The Geographer's Tool Kit	BDV4C Entrepreneurship: Venture Planning in an Electronic Age	(R) SCH3U Chemistry	(R) MDM4U Mathematics of Data Management	(R) CGT3E Geographics: The Geographer's Tool Kit	Cooperative Education

* For an outline of this course, see Appendix D.

** Students in the university pathway are advised to complete their cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

Draft 2007–2008

E. Occupations in the Forestry Sector

The National Occupational Classification (NOC) is a system that describes and classifies all occupations in Canada using four-digit codes called National Occupation Codes (NOCs). This system and the codes are the authoritative source for occupational information in Canada. Entering one of these four-digit codes in the "Quick Search" box on the NOC website (http://www23.hrdc-drhc.gc.ca/2001/e/generic/welcome.shtml) provides occupational information related to that career.

For more information on occupations, go to the Ontario Skills Passport website (http://skills.edu.gov.on.ca), click on "Occupations and Tasks" in the navigation bar, select "Sorted by NOC", and click on the "Sample Workplace Tasks" checkmark for one of the occupations to view a description of the occupation, an overview of the Essential Skills required in the occupation, a list of sample tasks for the occupation, and assessment tools and other career and employment information related to the occupation.

The following are examples of occupations in the forestry sector, with corresponding NOC codes, sorted according to the type of postsecondary education or training the occupations would normally require.

Note: Some of the names of occupations given below may differ slightly from the names in the NOC. The names listed here reflect common usage by institutions and organizations in this sector in Ontario.

Apprenticeship Training • Arborist 2225	**College** • Forest Engineering Technician/Technologist 2223 • Forest Inventory Resource Officer 2223 • Forest Products Technologist 2211 • Forest Resource Technician 2223 • GIS Technician/Technologist 2255
University • Forest Ecologist 2121 • Forester 2122 • Forestry Engineer 2122 • Project Management – Forester 2122 • Surveyor 2131	**Workplace** • Brush Cutter – Forestry 8422 • Cone Harvester / Harvest Hand 8432 • Forest Firefighter 8422 • Forest Worker 8421 • Mechanical Harvester Operator – Logging 8421 • Saw Filer/Fitter 7383 • Silviculture Worker 8422 • Spacing Saw Operator – Forestry 8422 • Tree Planter 8616

F. Postsecondary Programs and Training Related to Careers in the Forestry Sector

The following are examples of programs and training related to careers in the forestry sector and the accreditations or types of accreditation each results in:

Apprenticeship Training

Arborist	Certificate of Apprenticeship/ Certificate of Qualification

College

Arboriculturist	Diploma
Enforcement Officer – Forestry	Diploma
Extension Ranger – Forestry	Diploma
Field Naturalist	Diploma
Forest Fire Technician	Diploma
Forestry Technician	Diploma
Geomatics/GIS Technician	Diploma

University

Forestry Engineer	Bachelor's degree
Project Management – Forester	Bachelor's degree

Training for the Workplace

Brusher	Certificate
Cone Harvester	Certificate
Forestry Worker	Certificate
Saw Filer/Fitter	Certificate
Spacer	Certificate
Tree Planter	Certificate

G. Resources

Associations and Other Professional Groups

Alliance of Sector Councils	www.councils.org
Canadian Ecology Centre	www.canadianecology.ca
Canadian Forestry Association	www.canadianforestry.com
Canadian Model Forest Network	www.modelforest.net
Conference Board of Canada	www.conferenceboard.ca
International Technology Education Association (ITEA)	www.iteaconnect.org
Ontario Cooperative Education Association	www.ocea.on.ca
Ontario Council for Technology Education (OCTE)	www.octe.on.ca
Ontario School Counsellors' Association	www.osca.ca
Ontario Soil and Crop Improvement Association	www.ontariosoilcrop.org
Skills Canada	www.skillscanada.com
Skills Canada–Ontario	www.skillsontario.com

Careers

Apprenticeship Search	www.apprenticesearch.com
Canada Job Futures	www.jobfutures.ca
Career Cruising	www.careercruising.com
Employment Ontario	www.edu.gov.on.ca/eng/tec/etlanding.html
Job Bank	www.jobbank.gc.ca
Labour Market Information	www.labourmarketinformation.ca/
Ontario Prospects	www.ontarioprospects.info

Ontario Skills Passport (OSP)	http://skills.edu.gov.on.ca
Ontario WorkInfoNet	www.onwin.ca/english
Statistics Canada	www.statcan.ca
Youth Opportunities Ontario	www.youthjobs.gov.on.ca

Education/Government

Applications of Working and Learning National Project	www.awal.ca/about.asp
Federal Resources for Educational Excellence	www.free.ed.gov
Independent Learning Centre	www.ilc.org
Industry Canada	www.ic.gc.ca/epic/site/ic1.nsf/en/home
Ministry of Education	www.edu.gov.on.ca
Ministry of Labour	www.labour.gov.on.ca
Ministry of Natural Resources	http://ontariosforests.mnr.gov.on.ca
Ministry of Research and Innovation	www.mri.gov.on.ca
Ministry of Small Business and Entrepreneurship	www.sbe.gov.on.ca
Ministry of Training, Colleges and Universities	www.edu.gov.on.ca/eng/tcu
Ontario College Application Service	www.ontariocolleges.ca
Ontario Universities' Application Centre	www.ouac.on.ca
Passport to Prosperity	www.edu.gov.on.ca/passport
Towes: How do your skills measure up? Skill Plan	http://measureup.towes.com

Safety, Training, and Certifications

BC Industry Skills Improvement Council	www.skillplan.ca/English/publications.htm
Canada Safety Council (CSC)	www.safety-council.org/
Canadian Centre for Occupational Health and Safety (CCOHS)	www.ccohs.ca/
Canadian Ecology Centre	www.canadianecology.ca
Canadian Red Cross Society	www.redcross.ca
Industrial Accident Prevention Association (IAPA)	www.iapa.ca/home/home.asp
Live Safe! Work Smart!	www.livesafeworksmart.net

Ontario Forestry Safe Workplace Association (OFSWA)	www.ofswa.on.ca
Ontario Pesticide Safety Program	www.opep.ca
Passport to Safety	www.passporttosafety.com
Prevention Dynamics	www.preventiondynamics.com
St. John Ambulance	www.sja.ca
Virtual WHMIS	www.virtualwhmis.com
Working Safely in the Woods – Proper Felling Techniques	www.whscc.nb.ca/docs/FellingGuide_e.pdf
Workplace Safety and Insurance Board (WSIB)	www.wsib.on.ca

H. Appendices

Appendix A: Contextualized Learning Activities (CLAs) for the Specialist High Skills Majors

For the "other required credits" in the bundle of credits, students in a Specialist High Skills Major program must complete learning activities that are contextualized to the knowledge and skills relevant to the economic sector of the SHSM. Contextualized learning activities (CLAs) address curriculum expectations in these courses.

CLAs must take a minimum of 6 hours to complete. Boards may choose to develop one activity that takes 6 hours to complete or two or more activities that together take a minimum of 6 hours to complete.

This template must be used to describe the CLAs. The completed form must be submitted to the Ministry of Education for approval.

Contextualized Learning Activity (CLA) Template

Submit all material in Microsoft Word.

Contact Information

Board: _____

Development date: _____

Contact person: _____

Position: _____

Phone: ( )_____-_____ Fax: ( )_____-_____ E-mail: _____

Specialist High Skills Major	
Course code and course title	
Name of contextualized learning activity/activities	

(continued)

Appendix A ***(continued)***

Brief description of contextualized learning activity/activities	
Duration	*(A minimum of 6 hours to complete the CLA(s) is required.)*
Overall expectations	*(Identify the overall expectation(s) to be assessed and/or evaluated through the CLA(s). Include strand title(s).)*
Specific expectations	*(Identify the specific expectations related to the above overall expectation(s) that are addressed in the instructional and assessment strategies of the CLA(s). Include strand title(s) and suborganizer(s).)*
Essential Skills and work habits from the OSP	*(List the Essential Skills and work habits from the OSP that are addressed in the CLA(s).)*
Catholic graduate expectations (if applicable)	

Instructional/Assessment Strategies

Teacher's Notes *(Provide suggestions that will assist the teacher in delivering the CLA(s). For example, remind teachers to make sure that handouts, such as authentic workplace materials/documents used by the sector, are available for the activity.)*

Context *(Describe the workplace context for the activity/activities.)*

Strategies *(In point form, describe the sequence of instructional and assessment strategies that will support the intended learning. Attach all student handouts and worksheets.)*

Assessment and Evaluation of Student Achievement – Summary

(List all assessment and evaluation strategies and tasks, based on the strategies identified in the preceding section. Attach checklists, rubrics, correction keys, etc.)

Strategies/Tasks *(add rows as required)*	**Purpose** Assessment *for* learning (diagnostic, formative) *OR* Assessment *of* learning (summative; for evaluation)
1.	
2.	
3.	
4.	
5.	
6.	

Additional Notes/Comments/Explanations

(Provide additional suggestions for teachers that will help them deliver the CLA(s).)

Resources

(List all the resources needed to support the implementation of the CLA(s).)

Authentic Workplace Materials *(e.g., blueprints, workplace manuals, specification sheets, spreadsheets)*

Human Resources

Print

Video/DVD

Software

Websites

Other

Accommodations

(List instructional, environmental, and assessment accommodations.)

List of Attachments

(Attach all related materials, e.g., student worksheets, tests, rubrics.)

Appendix B: Forms of Experiential Learning and Related Programs

Length	Credit Value	Description	Key Elements
Job shadowing			
1/2 to 1 day (in some cases, up to 3 days)	none	one-on-one observation of a worker at a place of employment	• involves the pairing of a student with a worker in a specific occupation • may be integrated with a credit course • may be part of a student's school–work transition program
Job twinning			
1/2 to 1 day	none	one-on-one observation of a cooperative education student at his or her placement	• involves the pairing of a student with a cooperative education student • may be integrated with a credit course • may be part of a student's school–work transition program
Work experience			
1–4 weeks	none	a planned learning opportunity, within any credit course, that provides students with relatively short-term work experiences, usually of one or two weeks' duration and not exceeding four weeks	• involves a short-term, subject-related work placement • forms an integral part of a specific credit course • requires pre-placement orientation • requires a personalized placement learning plan
Virtual work experience			
the equivalent of 1–4 weeks	none	a simulated work experience, within any credit course, that allows students, including students who receive a special education program or services and students in rural areas, to take advantage of a greater variety of experiences than those available in the local economy	• involves a short-term, subject-related virtual work placement facilitated through the use of computer software and the Internet • forms an integral part of a specific credit course • requires pre-placement orientation • requires a personalized placement learning plan
Cooperative education			
full term (year or semester)	1 credit per 110-hour cooperative education credit course successfully completed	a planned learning experience, for which credits are earned, that integrates classroom theory and learning experiences at a workplace to enable students to apply and refine the knowledge and skills acquired in a related curriculum course or a locally developed course	• requires a personalized placement learning plan • involves the earning of credits • requires 15 hours of pre-placement instruction • is monitored by the cooperative education teacher • has a classroom and a workplace component • involves reflective learning • requires 7 hours of integration per co-op credit

(continued)

Appendix B *(continued)*

Length	Credit Value	Description	Key Elements
School–work transition programs			
varies, but typically not less than 2 years (3–4 semesters over Grades 11 and 12)	varies with type of planned workplace experience	a combination of school- and work-based education and training involving a variety of learning opportunities	• is oriented towards students who will be entering the workforce directly after high school • involves the development of partnerships with employers • involves the enhancement of curriculum with input from employers • involves the earning of cooperative education credits
Ontario Youth Apprenticeship Program (OYAP)			
varies, but typically not less than 2 years (3–4 semesters over Grades 11 and 12)	varies with opportunities	an opportunity for a student to meet diploma requirements while participating in an apprenticeship occupation	• is designed for students 16 years of age and older who have already earned 16 credits towards the OSSD • may involve the student's registration in an apprenticeship • requires documentation by the student and trainer regarding trade-specific competencies acquired • involves the earning of cooperative education credits

(From Ontario Ministry of Education, *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*, pp. 7–8)

Appendix C: Minimum Age to Work in and Visit Ontario Workplaces[1]

<table>
<tr><th>Specialist High Skills Major[2]</th><th>Type of Workplace</th><th>Minimum Age to Work</th><th>Minimum Age to Visit / Conditions for Visiting[3]</th></tr>
<tr><td>• Arts and Culture
• Business
• Health and Wellness
• Hospitality and Tourism</td><td>Industrial establishments,[4] such as offices, stores, arenas, restaurant serving areas</td><td>14</td><td rowspan="3">The regulation governing industrial establishments (Reg. 851, R.R.O. 1990) made under the OHSA sets out minimum age restrictions for workers, covering workplaces such as offices, stores, arenas, restaurants, and factories. However, the regulation states that people younger than the specified minimum age to work may visit (but not work in) these establishments if:
• they are accompanied by a person who has attained the age of majority (i.e., 18 years of age);
• they are being guided on a tour of the industrial establishment (e.g., office, store, arena, or factory);
• they are in an area of the industrial establishment used for sales purposes; or
• they are in an area of the establishment to which the public generally has access.</td></tr>
<tr><td>• Business
• Hospitality and Tourism
• Manufacturing
• Transportation</td><td>Most factories,[5] including restaurants and any commercial kitchens, automotive service garages, produce and meat preparation or shipping and receiving areas in grocery stores, laundries, and warehouses</td><td>15</td></tr>
<tr><td>• Forestry</td><td>Logging operations[6]</td><td>16</td></tr>
<tr><td>• Construction</td><td>Construction project[7]</td><td colspan="2">16
Under the regulation governing construction projects (O. Reg. 213/91) made under the OHSA, 16 is the minimum age to work on or to visit any construction project. A person under the age of 16 may visit a construction site only when work is not being performed there. (Note that the definitions of construction and construction project include a wide variety of types of work and workplaces. It is important to review the definitions carefully. See note 7, below.)</td></tr>
</table>

All notes appear on pages 32–34.

(continued)

Appendix C ***(continued)***

Specialist High Skills Major[2]	Type of Workplace	Minimum Age to Work	Minimum Age to Visit / Conditions for Visiting[3]
• Mining	Surface mines,[8] mining plants[9] Underground mine Working face of a surface mine	16 18 18	The regulation governing mines and mining plants (Reg. 854, R.R.O. 1990) made under the OHSA allows for tours or visits to mines and mining plants by persons who are younger than the specified minimum age to work if they are accompanied by and under the direction of a guide.
• Agriculture • Arts and Culture • Environment • Health and Wellness • Horticulture and Landscaping	Certain workplaces (or parts thereof) may be covered, with respect to age restrictions, by regulations governing other sectors. For example, see the industrial establishments regulation (Reg. 851, R.R.O. 1990).		
• Construction • Manufacturing	Window cleaning	18	*Not applicable.* (The regulation governing window cleaning is Reg. 859, R.R.O. 1990.)

Notes to Appendix C

1. As specified in regulations made under the Occupational Health and Safety Act (OHSA). Other statutes and regulations made under those statutes also set minimum ages for various occupations.

   In addition, some workplaces have established their own, *more stringent* minimum ages for employment. For instance, some retail establishments and restaurant chains will not hire anyone under the age of 16, even though the legislated minimum age limit is lower. Similarly, some industrial establishments, and other workplaces that require the use of heavy equipment or machinery, will not hire anyone under the age of 18, even though the legislated minimum age limit might be lower. Such in-house minimum age requirements may be acceptable, as long as the limits do not conflict with the Ontario Human Rights Code or other applicable law.

2. Column 1 identifies the Specialist High Skills Majors with which the workplace categories in column 2 may be associated. Note, however, that some specialist programs may involve workplaces identified in more than one category (e.g., a business program may involve offices, factories, and construction sites). When using this chart to verify compliance

with minimum age to work and visit requirements, always refer to the particular type of workplaces involved in the program (column 2), not to the sector to which the program relates (column 1).

3. Under certain conditions, as identified in this table, persons younger than the minimum age to work may visit, *but not work in*, certain workplaces.

4. According to the OHSA, ***industrial establishment*** means an office building, factory, arena, shop or office, and any land, buildings and structures appertaining thereto.

5. According to the OHSA, ***factory*** means

   a) a building or place other than a mine, mining plant or place where homework is carried on, where,

      i) any manufacturing process or assembling in connection with the manufacturing of any goods or products is carried on,

      ii) in preparing, inspecting, manufacturing, finishing, repairing, warehousing, cleaning or adapting for hire or sale any substance, article or thing, energy is,

         (A) used to work with any machinery or device, or

         (B) modified in any manner,

      iii) any work is performed by way of trade or for the purposes of gain in or incidental to the making of any goods, substance, article or thing or part thereof,

      iv) any work is performed by way of trade or for the purposes of gain in or incidental to the altering, demolishing, repairing, maintaining, ornamenting, finishing, storing, cleaning, washing or adapting for sale of any goods, substance, article or thing, or

      v) aircraft, locomotives, or vehicles used for private or public transport are maintained,

   b) a laundry including a laundry operated in conjunction with,

      i) a public or private hospital,

      ii) a hotel, or

      iii) a public or private institution for religious, charitable or educational purposes, and

   c) a logging operation.

6. According to the OHSA, ***logging*** means the operation of felling or trimming trees for commercial or industrial purposes or for the clearing of land, and includes the measuring, storing, transporting or floating of logs, the maintenance of haul roads, scarification, the carrying out of planned burns and the practice of silviculture.

7. According to the OHSA, ***construction*** includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting or concreting, the installation of any machinery or plant, and any work or undertaking in connection with a project but does not include any work or undertaking underground in a mine.

Project means a construction project, whether public or private, including,

a) the construction of a building, bridge, structure, industrial establishment, mining plant, shaft, tunnel, caisson, trench, excavation, highway, railway, street, runway, parking lot, cofferdam, conduit, sewer, water main, service connection, telegraph, telephone or electrical cable, pipe line, duct or well, or any combination thereof,

b) the moving of a building or structure, and

c) any work or undertaking, or any lands or appurtenances used in connection with construction.

8. According to the OHSA, ***mine*** means any work or undertaking for the purpose of opening up, proving, removing or extracting any metallic or non-metallic mineral or mineral-bearing substance, rock, earth, clay, sand or gravel.

9. According to the OHSA, ***mining plant*** means any roasting or smelting furnace, concentrator, mill or place used for or in connection with washing, crushing, grinding, sifting, reducing, leaching, roasting, smelting, refining, treating or research on any substance mentioned in the definition of "mine" (see note 8, above).

Appendix D: Locally Developed Course

Course Outline for SHSM–Forestry, Locally Developed Course, Workplace Preparation – THF35

Prerequisite: none
Discipline/Subject: Technological Education
Board: Kawartha Pine Ridge District School Board

Course Description

This course focuses on sustainable forestry management, the required skills associated with mensuration and silvics and the ecology of present-day and historical forest types in Canada. Students are introduced to the skills and processes involved in related forest industries and have opportunities to develop employment skills in preparation for apprenticeship and training programs. Students gain practical experience in local wooded areas, applying their knowledge of sustainable wood lot and forest management. Students also study industry standards and codes, consider health and safety issues, explore careers in the forest industry, and investigate how this industry influences our society and the environment.

Key Curriculum Learning Expectations

A. Theory and Foundation

Overall Expectations

By the end of this course, students will:

- demonstrate an understanding of the conditions required for plant growth and of the plant growth techniques used specifically in forestry;
- investigate the size, impact, strength, and sustainability of the forest industry in Canada;
- describe what is meant by the term "sustainable forestry management" and how this applies to issues surrounding harvesting methods, silviculture, forest certification, product labelling, and the sustainability of the industry in Canada;
- analyse the relationships between plant biology and physiological processes and techniques related to the field of forestry;
- understand the principles and history of forestry practices in Canada and their effect on present-day forest types and forestry methods;
- describe and evaluate the integrated nature and complexity of the forest ecosystem.

B. Skills and Processes

Overall Expectations

By the end of this course students will:

- demonstrate an understanding of the skills and techniques required to develop and interpret a forest stand analysis;
- investigate experimentally the effect of various conditions on forest growth;
- understand and interpret the Ministry of Natural Resources provincial guidelines for allowable damage assessment in a working forest stand;

- use current technology to demonstrate a working knowledge of forestry processes used to meet the provincial guidelines for allowable damage assessment in a working forest stand;
- demonstrate an understanding of sustainable harvesting techniques (e.g., single tree selection, uniform shelter);
- use correct techniques and skills that meet industry standards in wood product manufacturing.

C. Impact and Consequences

Overall Expectations

By the end of this course students will:

- demonstrate an understanding of the impact of humans on the environment and assess alternative courses of action to protect the environment;
- evaluate the impact of the forestry industry in Canada (primary, secondary, and tertiary) on society and the environment;
- apply "theory and foundation" as well as skills to make more informed choices as consumers of wood products;
- evaluate, using data obtained from experiments and from print and electronic sources, the economic impact of the forest industry on the micro to macro scales within Ontario and Canada;
- investigate career opportunities and their associated pathways in the forest and wood product manufacturing industries;
- demonstrate an understanding of the Health and Safety Act specifically as it relates to the role of the worker in the forest industry;
- effectively implement safe work practices.

Units/Topics

1. Understanding Basic Forestry Concepts
2. Forestry Management
3. Forestry Processes
4. Economic, Social, and Environmental Impacts
5. Health and Safety

Assessment and Evaluation

Student achievement in this course will be assessed and evaluated according to ministry policy and the achievement chart in *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2000.*

The final grade will be determined as follows:

- 70% of the grade will be based on assessments and evaluations conducted throughout the course
- 30% of the grade will be based on culminating activities suitable to the course content and administered towards the end of the course.

Evaluation will reflect the student's most consistent level of achievement based on the Ministry of Education's levels of achievement.

Assessment will be based on the following: student essays, oral answers, self-assessment, tests and quizzes, group work/peer teaching, performances and presentations, projects, journals, and student–teacher conferences.

Many assessments and evaluations will take place in the forested areas surrounding Norwood District High School.

Program Profiles

Program Profile: Hastings and Prince Edward District School Board

Name of Initiative	**North Hastings High School Forestry Program**
Brief description	The program focuses on sustainable forestry resource management and the forest wood products industry, and provides students with practical forest operations experience collecting data, performing geomatics applications, harvesting lumber, and constructing wood products. There is an emphasis on silviculture, forest stand analysis and inventory, harvest planning, and related technologies, including small engines, heavy equipment, and wood products production. Students are actively involved in collecting and analysing forestry data, creating sustainable forestry management plans, performing forest harvesting operations, designing and building products, and enhancing related practical job skills. Students perform GPS and GIS data collection, travel to logging sites, fell trees, operate, maintain, and repair heavy equipment such as skidders, tour wood processing plants, and build furniture and housing models.
Number of students	54
Board	**Hastings and Prince Edward District School Board** 156 Ann St Belleville ON K8N 1N9
Board contact	Name: Mandy Savery-Whiteway Title: Student Success Leader Phone: 613-966-1170 ext. 2211 Fax: 613-966-5952 E-mail: msavery-whiteway@hpedsb.on.ca
School	**North Hastings High School** 14 Monck St Bancroft ON K0L 1C0
School contact	Name: Glen Pomeroy Title: Lead Teacher Phone: 613-332-1220 Fax: 613-332-0978 E-mail: gpomeroy@hpedsb.on.ca

Partners:

Business/Community	· Allison Small Engines · Bancroft Minden Forestry Company · Freymond Lumber Company · McGibbon Forestry · Ministry of Natural Resources · Robinson Logging · Town of Bancroft · Vance Motors
College	Fleming College

Program Profile: Kawartha Pine Ridge District School Board

Name of Initiative	**Sustainable Forestry**
Brief description	Students follow the sustainable management of forest resources from standing timber to harvest. They learn methods of stand analysis and forest measurement and develop industry skills in the areas of wood product manufacturing and welding. Students receive instruction in dimensional lumber sawing and drying techniques at the school.
Number of students	38
Board	**Kawartha Pine Ridge District School Board** 1994 Fisher Dr Peterborough ON K9J 7A1
Board contact	Name: Rob Andrews Title: Superintendent of Education, Student Success Leader Phone: 1-877-577-7048 ext. 2173 Fax: 705-742-7801 E-mail: Robert_andrews@kprdsb.ca
School	**Norwood District High School** PO Box 68 Norwood ON K0L 2V0
School contact	Name: Mike Burke Title: Forestry Teacher Phone: 705-639-5332 Fax: 705-639-1655 E-mail: michael_burke@kprdsb.ca
Partners: **Business/Community**	- Algonquin Forestry Authority - Haliburton Forest and Wildlife Reserver - Husqvarna Chainsaws - Ministry of Natural Resources - Nielson's Lumber - Ontario Forestry Association - Township of Havelock, Belmont, Methuen
College	Fleming College
University	Lakehead University

Program Profile: Conseil scolaire public du Nord-Est de l'Ontario

Name of Initiative	**Forestry Program**
Brief description	Students enrolled in this Specialist High Skills Major study techniques for effective forest management for sustainable development and have opportunities to put their learning into practice. They identify trees for culling and practise directional cuts and skidding. They cut these logs using a portable band saw and then dry the wood in a kiln. They also manufacture such products as mouldings and tongue and groove products using a S4S plane. The program enables students to earn certification in several fields and to gain an understanding of the changes that are constantly occurring in the lumber industry.
Number of students	18
Board	**Conseil scolaire public du Nord-Est de l'Ontario** CP 3600 310, avenue Algonquin North Bay ON P1B 9T5
Board contact	Name: Simon Fecteau Title: Direction du PARÉ (Programme axé sur la réussite des élèves) Phone: 705-264-1119 Fax: 705-262-7403 E-mail: fecteaus@csdne.edu.on.ca
School	**École secondaire Northern** 175, rue Ethel Sturgeon Falls ON P2B 2Z8
School contact	Name: Joël Desormiers Title: Enseignant Phone: 705-472-5322 Fax: 705-753-2400 E-mail: desormj@csdne.edu.on.ca

Partners:

Business/Community	◦ Canadian Ecology Centre ◦ Foretech, Inc. ◦ G. Larcher Rentals ◦ Goulard Castle Building Centre ◦ Goulard Lumber, Inc. ◦ Lake Nipissing Stewardship Council ◦ Ministry of Natural Resources, North Bay District ◦ Sturgeon Builders ◦ Tembec ◦ Timmins Forest Products
College	Collège Boréal

Program Profile: District School Board Ontario North East

Name of Initiative	**Englehart Forestry Program**
Brief description	Students have opportunities to earn a dual credit with Northern College and be out in the field working with logging contractors and foresters and applying skills learned in school to the world of work.
Number of students	17
Board	**District School Board Ontario North East** 153 Croatia Ave, Box 1020 Timmins ON P4N 7H7
Board contact	Name: Michelle Leigh Title: Assistant to the Director / Student Success Leader Phone: 705-360-1151 Fax: 705-268-3228 E-mail: michelle.leigh@dsb1.edu.on.ca
School	**Englehart High School** 61 Fourth St Englehart ON P0J 1H0
School contact	Name: Susi Johanson Title: Principal Phone: 705-544-2337 Fax: 705-544-8577 E-mail: susan.johanson@dsb1.edu.on.ca
Partners:	
Business/Community	• Aidie Creek Gardens • Elk Lake Eco-Resource Centre • Far North East Training Board • 5th Wheel Training Institute • Grant Forest Products, Inc. • Grant Learning Institute • H. Fiset & Sons • Laframboise Forest Ltd • Lafrance Logging • Ministry of Natural Resources • North Eastern Seed Management Association • Timiskaming Forest Alliance • Township of James
College	Northern College

Program Profile: Renfrew County Catholic District School Board

Name of Initiative	**Opportunities in a Changing Forest**
Brief description	This program offers students experiential learning opportunities in the geographic, scientific, and economic aspects of the forest industry in Renfrew County through partnerships with private woodlot owners, crown land managed forests associations, and the Petawawa Research Forest. Students learn safety skills, gain experience in operating heavy and small equipment, receive training in identification and scaling and in forestry survival, and learn about forestry sustainability methods. They engage in learning activities that involve hands-on experiences, field trips, job shadowing, cooperative education work placements, and research experience.
Number of students	20
Board 1	**Renfrew County Catholic District School Board** 499 Pembroke St West Pembroke ON K8A 5P1
Board contact	Name: Arlene Corrigan Title: Student Success Leader Phone: 613-735-6945 Fax: 613-735-8473 E-mail: acorrigan@rccdsb.edu.on.ca
Board 2	**Renfrew County District School Board** 1270 Pembroke St West Pembroke ON K8A 4G4
Board contact	Name: Gayle Bishop Title: Student Success Leader Phone: 613-735-1031 Fax: 613-735-6315 E-mail: bishopg@renfrew.edu.on.ca
School	**Bishop Smith Catholic High School** 362 Carmody St Pembroke ON K8A 4G2
School contact	Name: Tina Noel Title: OYAP/Co-op Phone: 613-735-5496 Fax: 613-735-9272 E-mail: tnoel@rccdsb.edu.on.ca

Partners:	
Business/Community	• Algonquin Forestry Authority • Canadian Forestry Association • Forest Stewardship Committee of Renfrew County • Hec Clouthier & Sons • Ministry of Natural Resources • Ottawa Valley Forestry • Petawawa Research Forest • Shaw Lumber
College	Algonquin College
University	Lakehead University